



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/056,038

01/28/2002

Toshiro Hayakawa

Q68258

2257

23373

7590

06/15/2004

SUGHRUE MION, PLLC  
2100 PENNSYLVANIA AVENUE, N.W.  
SUITE 800  
WASHINGTON, DC 20037

EXAMINER

NGUYEN, TUAN N

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Applicati n N .

10/056,038

Applicant(s)

HAYAKAWA, TOSHIRO

Examin r

Tuan N Nguyen

Art Unit

2828

-- The MAILING DATE of this communicati n appears on the cover sheet with the correspondence address --

### P r i d f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8, 9, 13, 14, 16, 17 is/are rejected.
- 7) ☒ Claim(s) 7, 10-12, 15, and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Response to Amendment***

1. In responding to applicant's amendment filed 04/05/2004, claims 1, 4, 6, 8, 9, 14, have been amended. Claims 1-18 are pending.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

8. Claims 1-6, 8, 9, 13, 14, 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scifres et al. (US 4656641) in view of Shin (US 6242328).

With respect to claims 1-5, Scifres et al. '641 shows in figures 1a/b, 2a-h, 3, 4a-J, 5a-d, 6a-d, 7a-d, 8a-b and discloses a light source apparatus comprising: a semiconductor laser (F 1a/b: 12) and spatial filter with a slit hole (F 1a/b: 10, 30, 31; Col 1: 60-67), a focus optical system (F 1a/b: 28), for eliminating stray light (Col 1: 35-46; Col 4: 9-20; Col 8: 55-65). Scifres et al.

Art Unit: 2828

further discloses that the filter is formed of a partial reflective mirror that partial reflects the light (Col 3-4: 65-9) and the instability of the light based on the shifting of higher operating power and operating temperature. The claim further requires a GaN light emitting, Scifres et al. '641 shows the p/n multi-emitter laser, *or other semiconductor laser* (F1: 12) (Col 2: 1-5) (Col 3: 34-40). In addition, applicant discloses the use of GaN semiconductor laser in the related field or Shin '328 disclose the use of GaN semiconductor for emission of laser beam, it is within the general skill of a worker in the art at the time the invention to provide Scifres et. al. '641 the GaN semiconductor as disclosed by the Applicant or Shin '328 for the intended light beam emission use. Scifres '641 further suggest the stray light being control so that more energy can be transmissive (Col 3: 65-68, Col 4: 1), where "example, transmissive beam is 70%, and 30% reflective or lost". Discovering the optimum or workable ranges so that stray light is 20% or less involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Since claims 6, 14 recite the same or identical elements/limitations it is inherent to use patents '641 and '328 to recite the method of eliminating stray light by use of a spatial filter, product by process.

With respect to claims 8, 9 Scifres '641 shows in (figure 1a: IMAGE PLANE), and the patent assignee is Xerox Corporation – "copier machine maker" it is inherent obvious that the disclose laser optical system is an image forming apparatus that scan photosensitive material with a light modulated based on image data to form the image borne by said image data.

With respect to claims 13, (Figures 1a, 1b, 2a-2h, 3, 4a-4j, 5a-5d, 7a-7d, 8a/b) show the slit width vary so that the convergence spot light vary, by moving the slit filter toward or away

Art Unit: 2828

from the beam. In discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With respect to claims 16, 17 it is inherent that the semiconductor laser has an active layer to performing the emitting of laser source, in addition to other layers such as barrier layers (as disclosed by Scifres '641: Col 3: 35-40 – multiquantum well laser) which provide different strip layers/portion. In addition, Scifres disclosed the polarize means of control the wavelength of the emission from the laser – such as grating, prism, or spectral filter (Col 2: 1-5). And it is well known in the art, that light “with relative amount of light” do bounce or crosstalk into other adjacent layers.

#### **Allowable Subject Matter**

Claims 7, 10, 11, 12, 15, or 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, since the prior art of record and considered pertinent to the applicant's disclosure does not teach or suggest the claim *wherein the stray light is stray light that is generated when drive current of the GaN type semiconductor light emitting element is less than the laser oscillation threshold value; or wherein the GaN type semiconductor light emitting element has an active layer having stripe portions, further wherein the stray light is randomly polarized light emitted from portions of the semiconductor light emitting element other than the stripe portions of the active layer, further wherein the stray light is cutoff by the slit panel.*

#### **Communication Information**

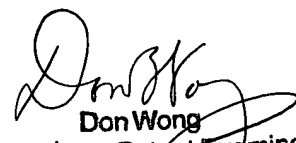
Art Unit: 2828

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (571) 272-1948. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

Tuan N. Nguyen



Don Wong  
Supervisory Patent Examiner  
Technology Center 2800